A SRS for CIE 2 Evaluation

In

Android Application Development

Submitted by

1. PATEL NIRAV –20SOEIT11019.
2. PATEL KRISHNA–20SOECE11056.
3. KAVATHIYA JEEL–20SOEIT11013.
4. KUNWAR POORAN–20SOECE11041

Department of Information Technology,
School of Engineering,
RK University,
Rajkot, Gujarat - 360020

Software Requirements Specification

for

LEARING MANAGEMENT SYSTEM

Version 1.0 approved

Prepared by

Nirav Patel,
Krishna Patel,
Pooran Kunwar,
Jeel Kavathiya

RK UNIVERSITY

15/09/2022

Table of Contents

Revision History

Name	Date	Reason For Changes	Version
Version 1.0	15/09/22	First document	1.0

1. Introduction

1.1 Purpose

The purpose of this document is to present a detailed description of the learning management system which will be used by teachers and students only .It will explain the purpose and features of the system, what the interfaces of the system will do and the constraints under which it must operate.

1.2 Document Conventions

Convention for Main title:

Font Face: Arial
Font Style: Bold
Font Size: 32

Convention for sub-title:

Font Face: Arial
Font Size: 14

Convention for body:

Font Face: Arial
Font Size: 11.5

1.3 Intended Audience and Reading Suggestions

Document is intended for the people of following profession: -

- **Project managers** - Project managers are those who supervise the entire project.
- **Implementers or coding expertise** - This category of professionals implements the design stated by the developers using programming languages. They are responsible for all the application modules and graphical user interfaces.
- **Tester** - This class of people test the developed system with the help of certain test cases and determine the efficiency and estimates the performance of the system.
- **Documentation writers** - Documentation writers prepare the user manuals and other necessary documents for proper setting of the system in a certain operating environment.

1.4 Project Scope

The name of our product is “Learning Management System” and its function is to control the interaction between teachers and students. LMS is an application in which the teachers will be able to manage student details, upload the course material, manage the time table and can view the student list easily. It will be easy for the students to access their courses , to view the time table and to view their profile.

The main objective of the project on Learning Management System is to manage the details of Students, Courses and Time-Table .

This product will provide the facility of performing all the basic teaching methodology. The targeted user groups are the remote students who will be the main benefit bearer.

1.5 References

UML Diagram : Software Engineering AP actioner’s Approach, Roger S Pressmen
Design frontend : Ownself
Backend : Youtube and Stackoverflow
Firebase : youtube and google firebase documentation

2. Overall Description

2.1 Product Perspective

Learning Management System is an application to be used by both Teacher and Student to improve the efficiency of teachers and students. The Learning Management System to be developed benefits greatly the members and the institute. The system provides to manage the details of Students, Teachers, Courses, Time-Table, etc.

2.2 Product Features

This Learning Management System provides the features for the Teachers and the Students. The features provided to the Teachers and Students are as follows:

Teacher

- Manage Course: The Teachers can manage the courses which are provided to the Students. By default, there are some courses that is already present in this module. So, the teachers can only add the chapter for the specific courses and delete or update the chapters.
- Manage profile : it manages the profile of teacher itself. they can update the details.
- Manage Profile of the Students: The Teachers can manage the profile of the Students. In this module the teacher can add the student details, update the details of the student and can delete the Student and can also view the list of the students.

- Manage Time-Table: In this module the Teacher can create time-table for the respective classes according to respective days. The Teachers can also modify the Time-Table.

- Students List: In this module teacher can see the details of all the Students and modify all the details

Student

- View Profile: Students can only view their profile.

- View Time-Table: Students can only view their time-table according to respective days.

- View Course: In this module student see their courses and access the contents of the courses.

2.3 User Classes and Characteristics

Users of this Learning Management System can be the teachers and the students. The user profile identified to have interaction with the Learning Management System that any student can login into the system and use the resources and any teacher can login and can mange the resources and the student profile. The teacher can easily register the student and provide time table and course material to them, so that the student can have easy access to it. Mainly we can categories the user as Teacher or a Student.

Users: Teacher, Student

1. **Teacher :** They are the core users and are able to add new users (students) to the system and permit them to access the student level features of the system.

As Teachers, they can add students, they can update the details of the students. The Teachers can add and update the time table for the students according to the respective classes. They can also add the courses materials for the particular subjects.

2. **Student :** They login and get access to the Learning Management System at user level .Each Student can view their profile, access the courses material for the particular subject, they can also view their timetable.

2.4 Operating Environment

Particulars	Teacher	Student
Operating System	Android	Android
System Version	Android 5.0 +	Android 5.0 +
RAM	2 MB	2 GB
Internet connection	require	require

2.5 Design and Implementation Constraints

Each user must keep their password as confidential. More over the user must have individual ID for creating a login in the LMS.

Only Administrator can control user addition and deletion in the system. Also, this group has the access to all the official activities.

The main challenge faced during the implementation of this project was to capture the video and broadcasting it to the client computers in real time. The next obstacle was the availability of fast and reliable internet connection.

2.6 User Documentation

The product is under development stage and requires a complete implemented prototype to explain the user documentation. Once the prototype is designed and implemented online manuals, user manuals can be provided.

2.7 Assumptions and Dependencies

- Each User must have a User ID and password.
- 256 Kbps Internet connection is a must.

3. System Features

The Learning Management System contains the following key features:

3.1 Authentication

3.1.1 Description and Priority

The system offers access to the LMS core functions and access to server resources at server level only by validating the user with the unique username and password.

3.1.2 Stimulus/Response Sequences

The response/stimulus for the different classes of users are:

a. Teachers: Login, Register, Forgot password, Manage Profile, Manage Time-Table, Add Student, Manage Student.

b. Students: Login, View Profile, View Course, View Time-Table.

3.2 Student Profile

3.2.1 Description and Priority

The system offers access to the LMS core functions and access to server resources at server level only by validating the user with the unique username and password.

3.2.2 Stimulus/Response Sequences

The response/stimulus for the different classes of users are:

a. Teachers: Teachers can login to the system and can manage student profile, edit the student profile and can also delete the student profile

b. Students: Students can login to the system and can view profile, view course, view Time-Table

3.3 Time Table

3.3.1 Description and Priority

The system offers access to the Teachers to make the time table for the respective classes through the Learning Management System. Whereas the Student can view the time table for their respective classes by login to the system.

3.3.2 Stimulus/Response Sequences

The response/stimulus for the different classes of users are:

Teachers:
They can Login to the system and can go to the Manage time table module where they can make the time table for the respective classes where they need to enter the following details:

a. Lecture no.
b. Subject name.
c. Subject code.
d. Subject Faculty.
e. Lecture timing.
f. Day of the week.

Students:
The students can just view the timetable by login in to the system and go to time table module to view the time table for their classes.

3.4 Courses

3.4.1 Description and Priority

The system offers teachers to upload the chapter for the courses through the Learning Management System. Whereas the Student can have an easy access to the course material.

3.4.2 Stimulus/Response Sequences

The response/stimulus for the different classes of users are:

Teachers:

Teachers can Login to the system and can go to the Manage courses module where they can upload and delete the chapter for their courses. They need to enter the following details:

a. Title
b. File to be uploaded

Students:
Students can have easy access to the materials available for their courses.

Functional Requirements

The Functional Requirements for this system are as follows:

1. Register new students.
2. Providing Time Table to the students.
3. Maintaining Student List.
4. Updating Student Profile.

5. Deleting the Student.
6. Uploading the course materials.
7. Viewing the time table for their respective classes.
8. Accessing study materials easily
9. Viewing student profie

4. External Interface Requirements

4.1 User Interfaces

The Learning Management System mobile application provide a user interface that will be accessible through any android phone.

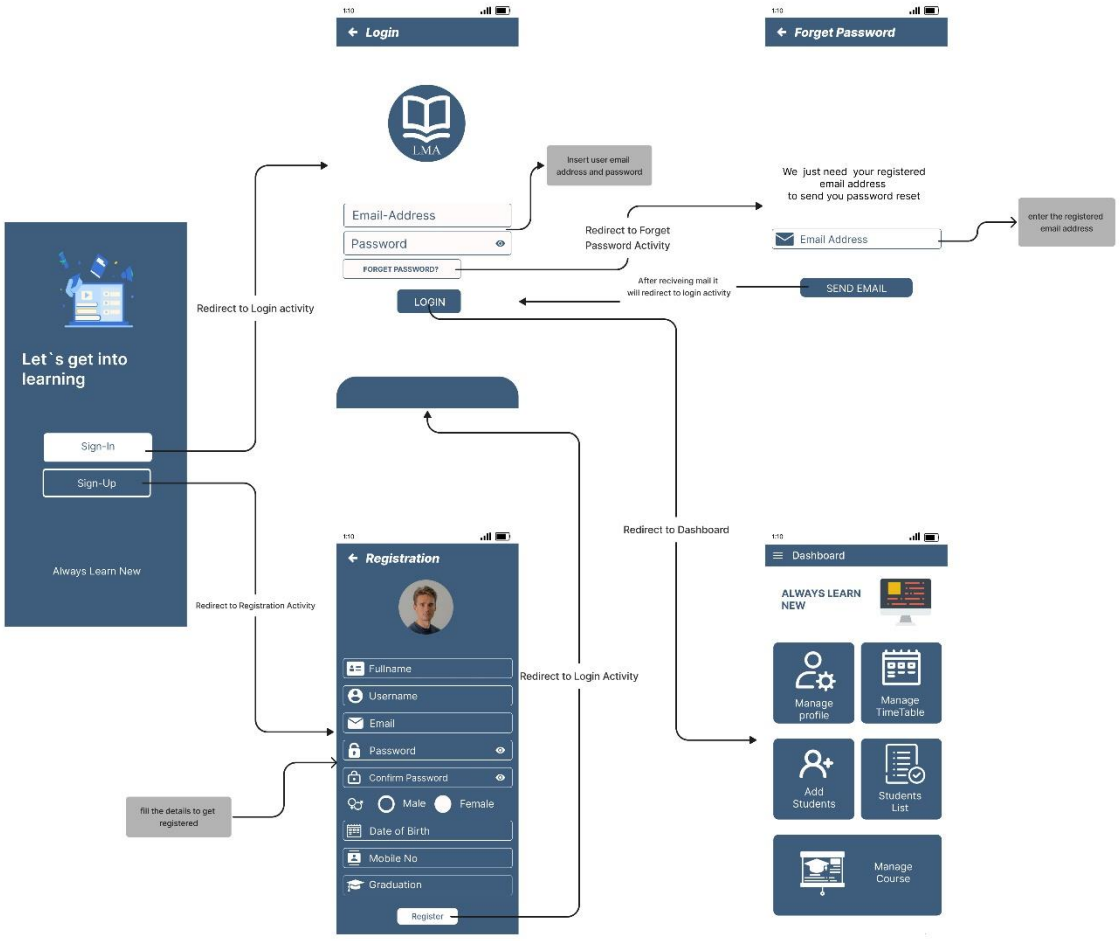
Login Screen: This is a security feature inbuilt in the application for the verification of authenticated user over intruders.

Teacher Account: This enables the user to perform the teacher's level activities like Manage Profile, Manage Time-Table, Add Students, Manage Students.

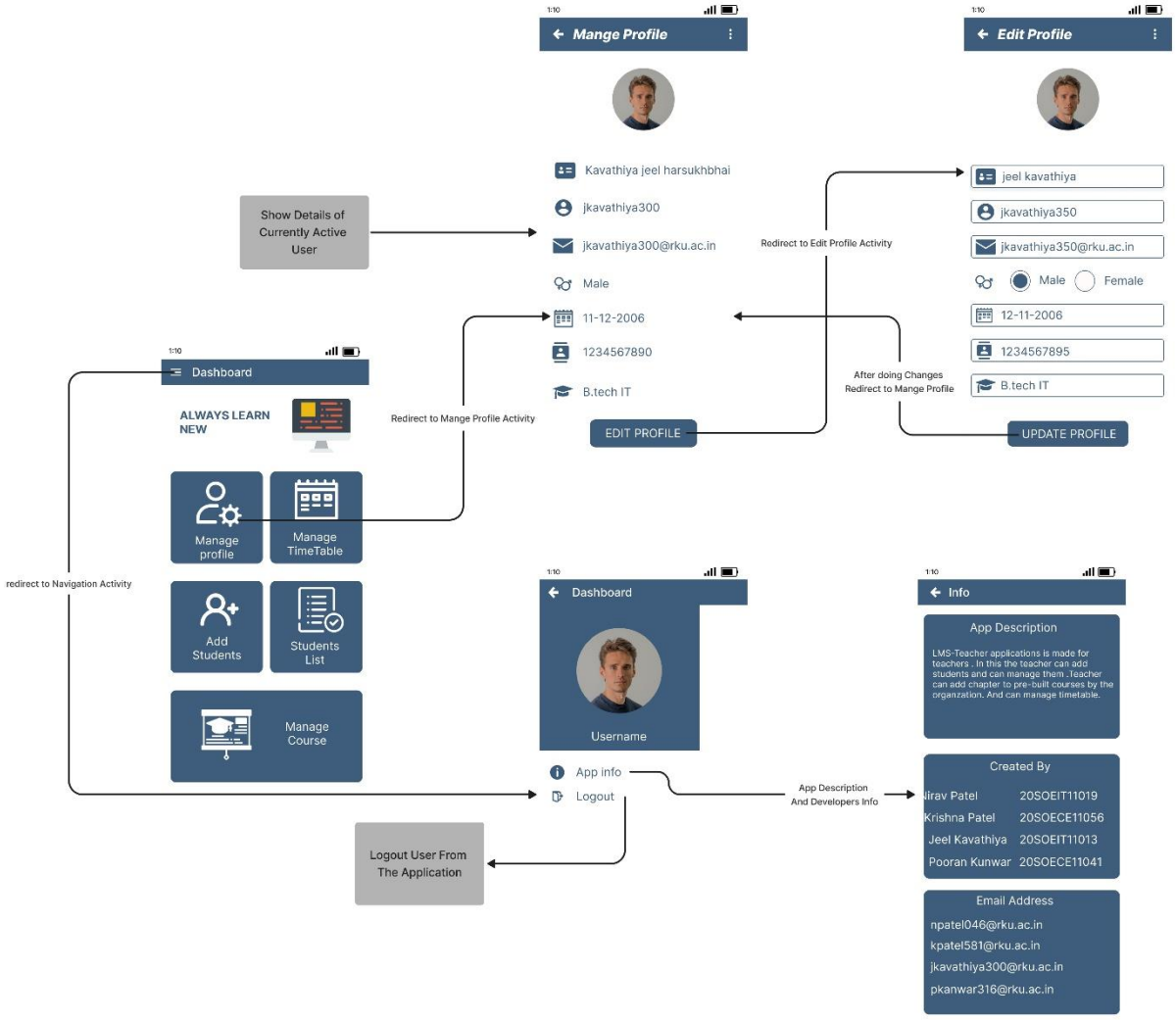
Student Account: This enables the user to view the activities conducted by the teacher.

A : TEACHER APP

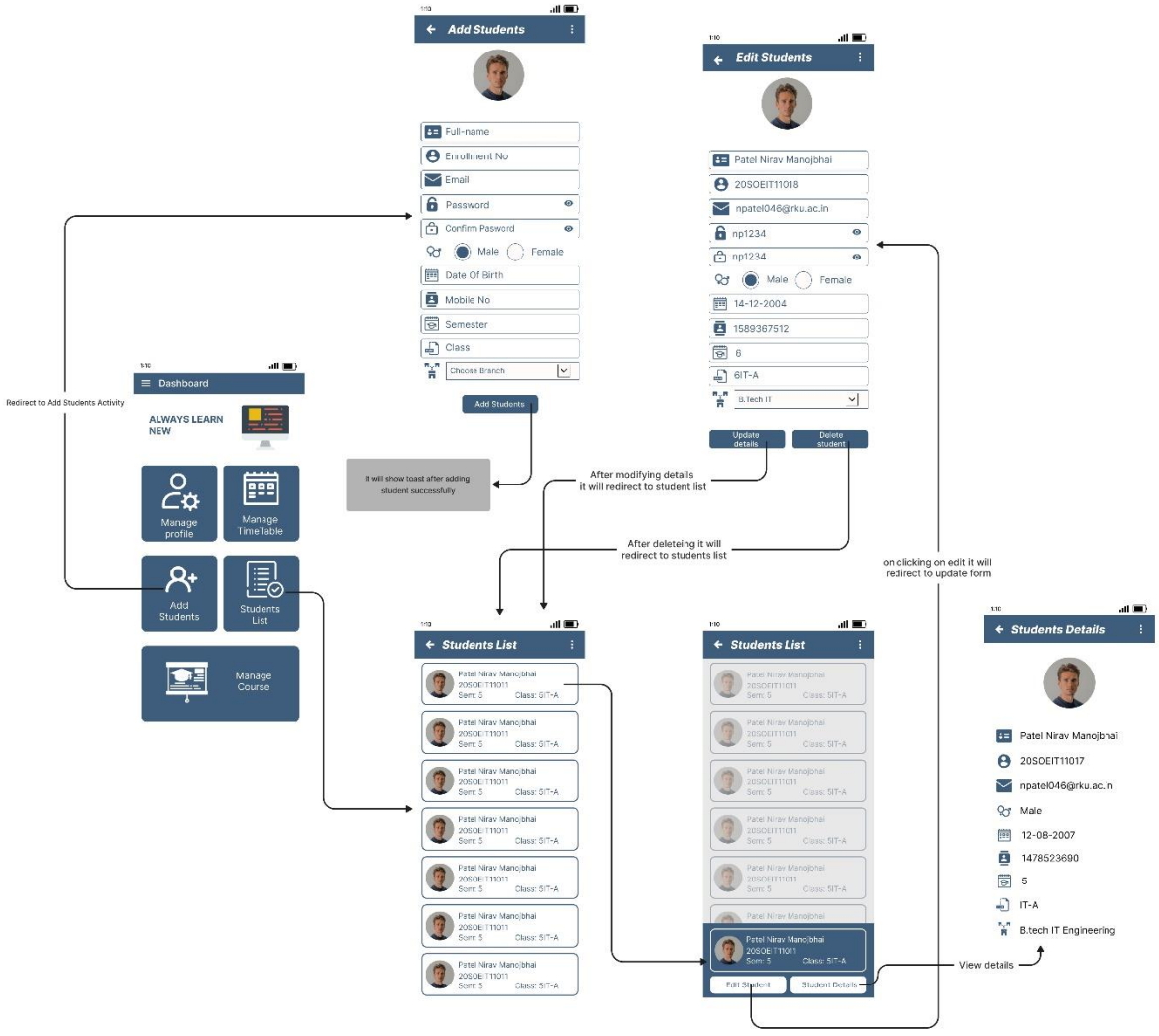
1.Login and Registration Activities:



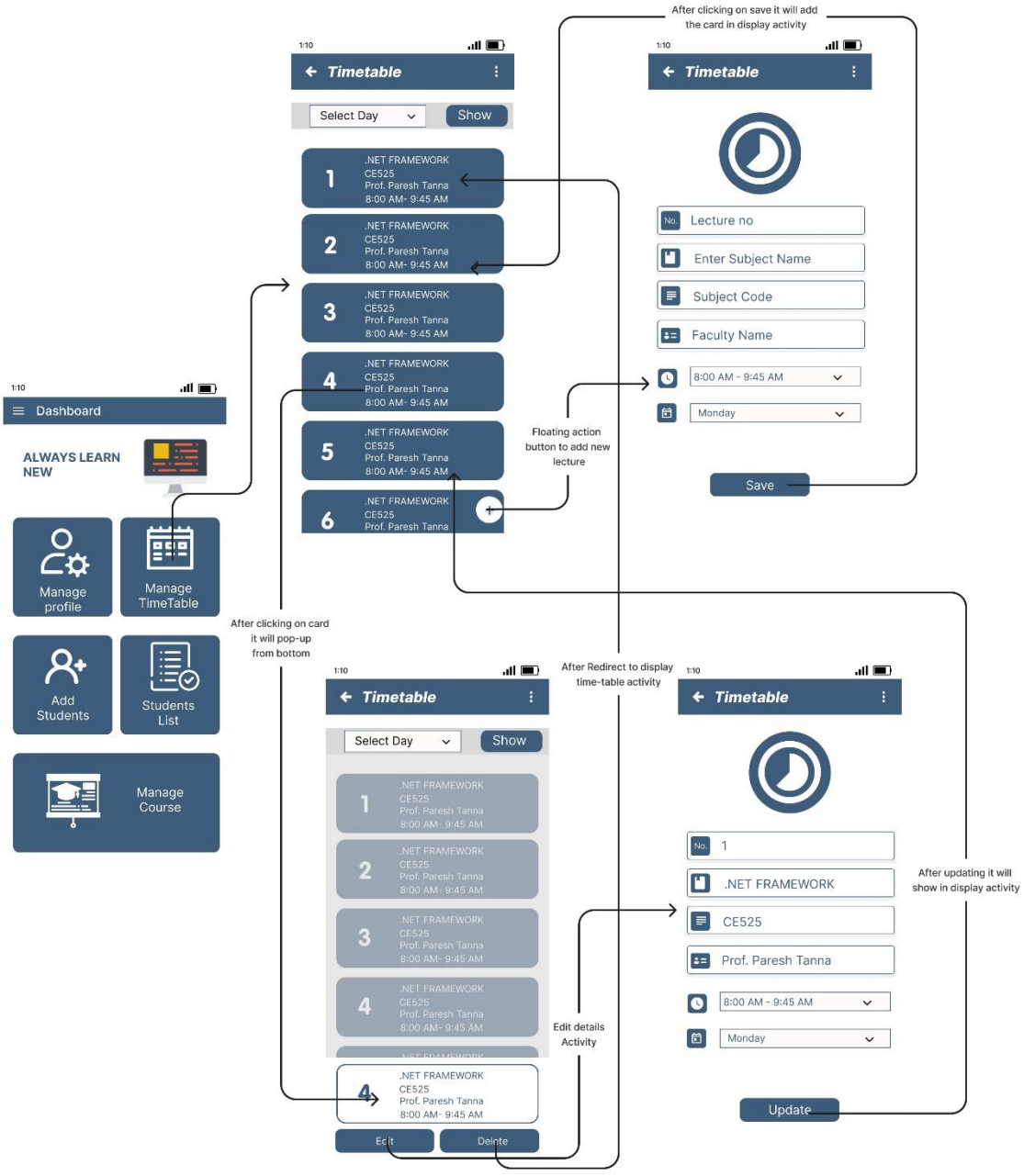
2. Manage Profile Activities :



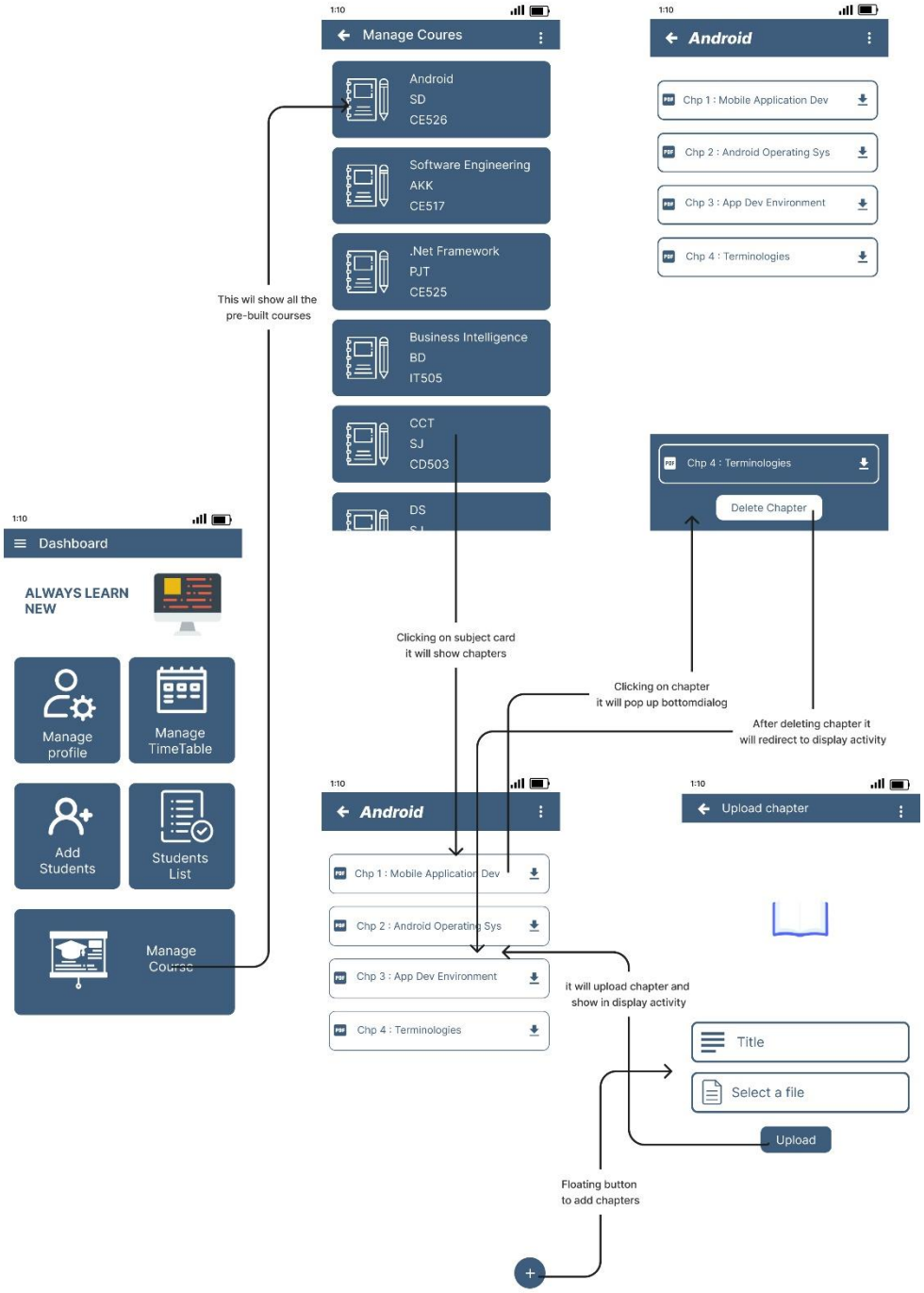
3. Add Student and Students List Activities :



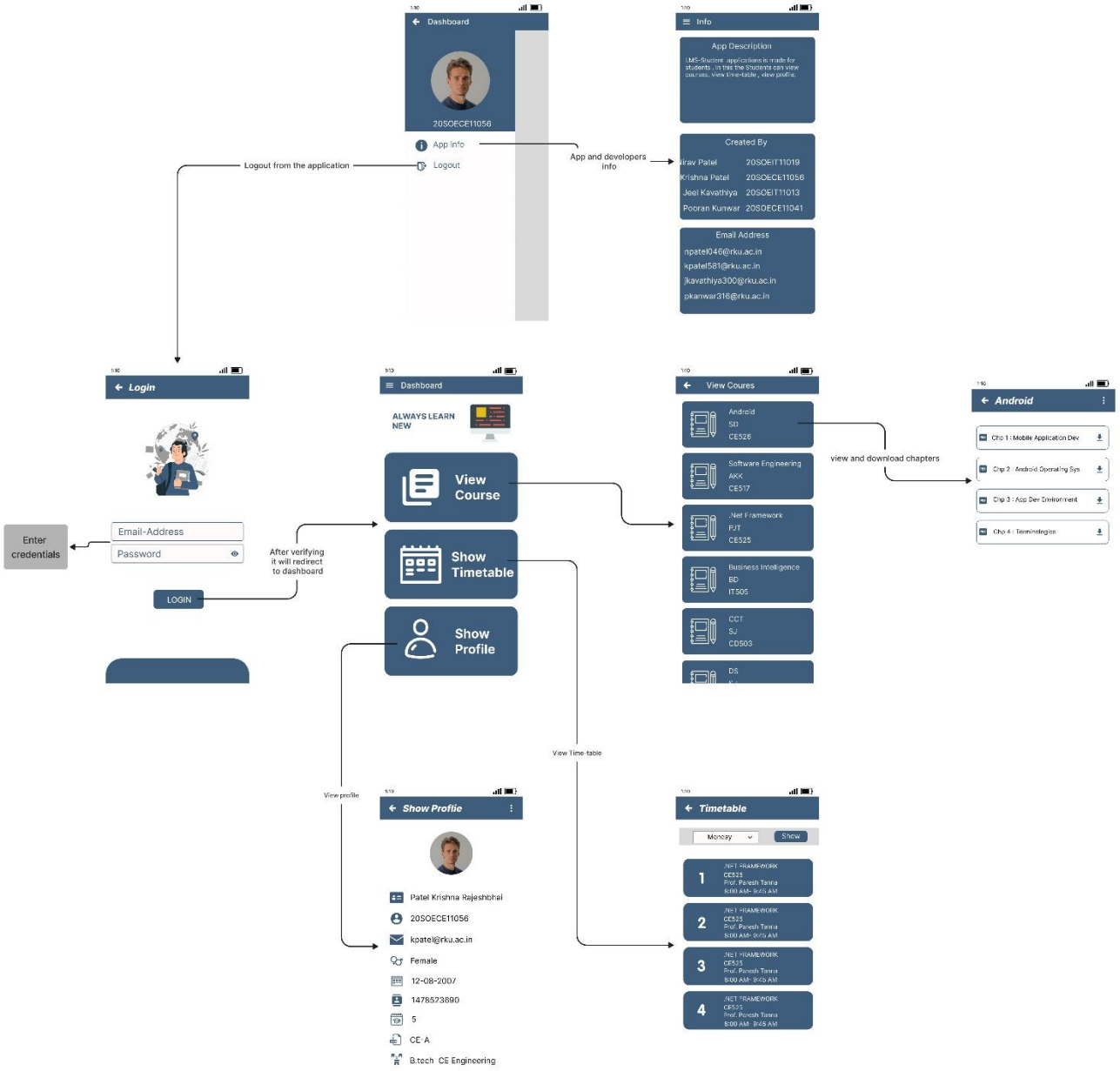
4.Manage Time-Table Activities :



5. Manage Course Activities :



B : STUDENT APP



4.2 Hardware Interfaces

No hardware interface use.

4.3 Software Interfaces

LMS is a multi-user, multi-tasking environment. It enables the students to interact with teachers and create a virtual learning environment. It uses XML as the front-end programming tool and JAVA as the backend application tool.

Firebase data base is use to store and retrieve data.

4.4 Communications Interfaces

This system will require internet connection which help to retrieve real time data form firebase.

5. Other Nonfunctional Requirements

In this system, the authentication of the user is an important factor. In this system, user authentication will be done by login by user name and password and classified by user type. Users will get access to the system as permissions are classified for that type of user.

5.1 Performance Requirements

The important aspects of LMS software is time constrain. LMS software system is real time and hence should be performed in minimum requirements.

The accountability is a vital feature and this could only be assured if the system is working in full capability.

Safety Requirements

Reliable Internet is the backbone of the software so for the real-time database to store a particular data into the database and uninterrupted internet connection.

Power is a significant feature and the power supply should be always taken care of. An uninterrupted power supply is always recommended.

5.2 Security Requirements

The security system features from having a login for all the users to access the software. The login details will be used in the system also. So the chances of the software getting intruded are very less.

5.3 Software Quality Attributes

The Java programmer helps the LMS to achieve platform independence.
Hence, it can run on any environment that is available in the mobile phone.

6. Other Requirements

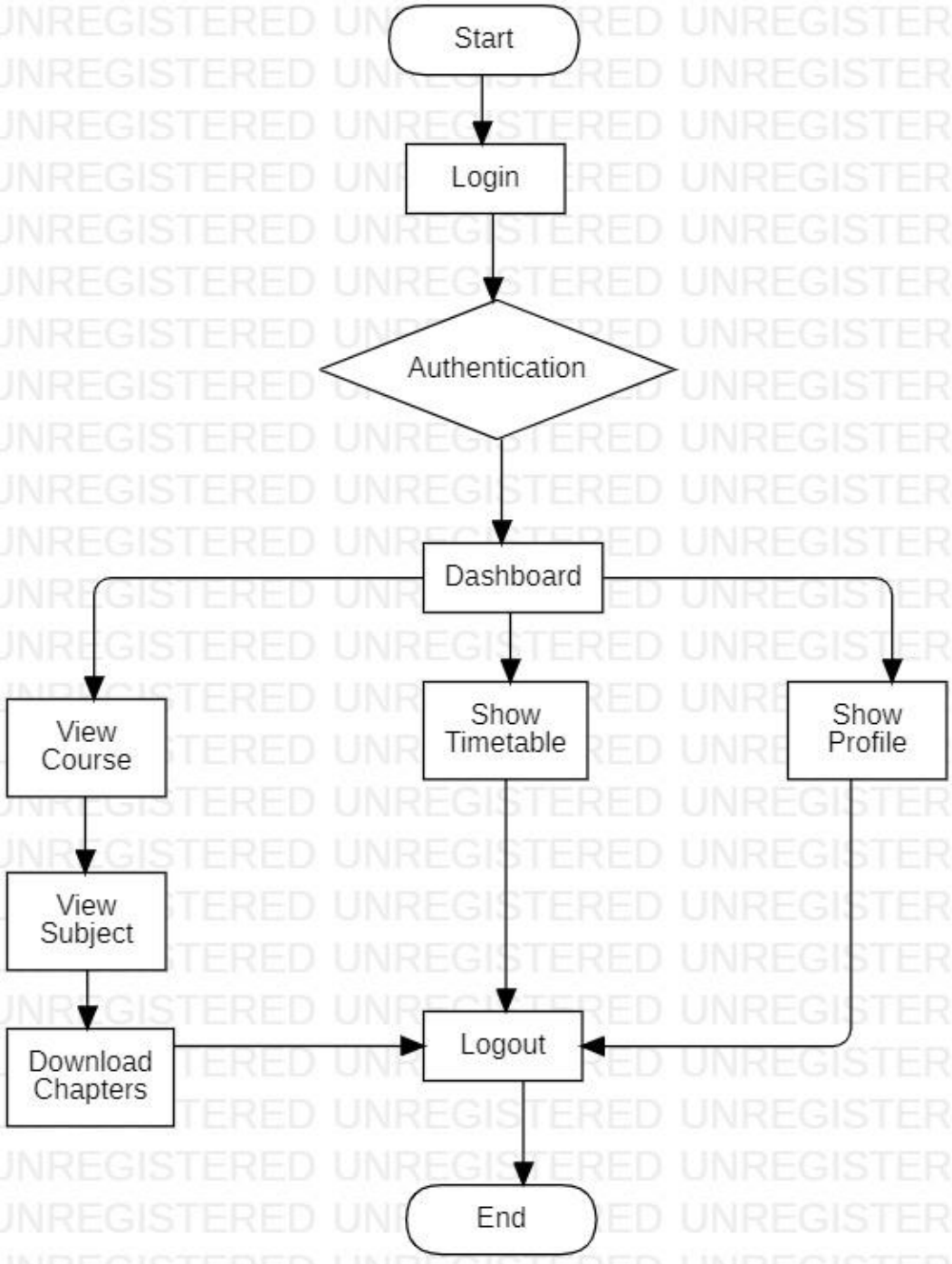
Legal Requirements:

Illegal duplication of the reports will be strictly dealt with. This is not an open-source software hence source code of the product won't be open. Further modifications and improvements rights will be with the developer team.

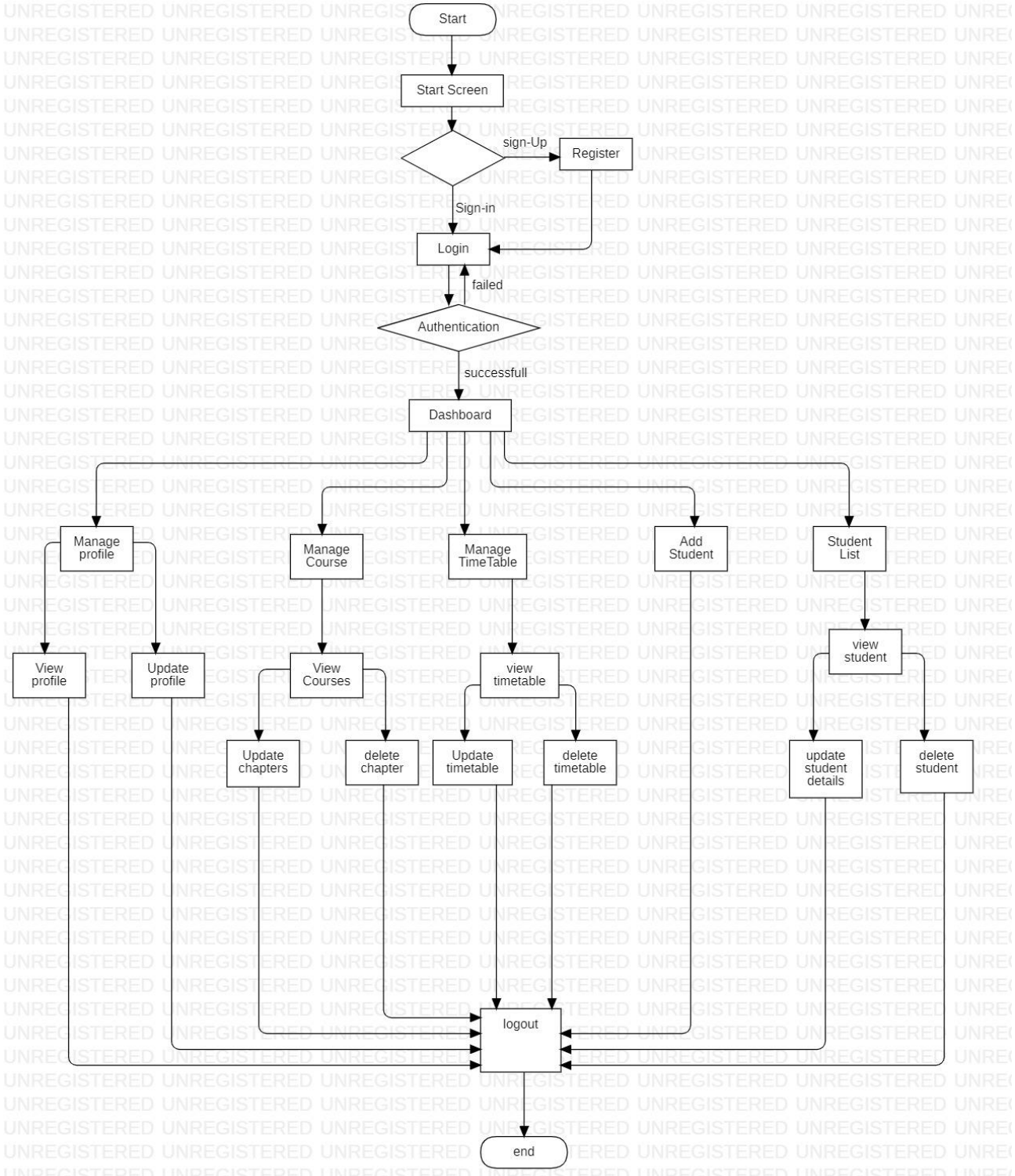
APPENDIX A : Analysis models

6.1 Flow chart :

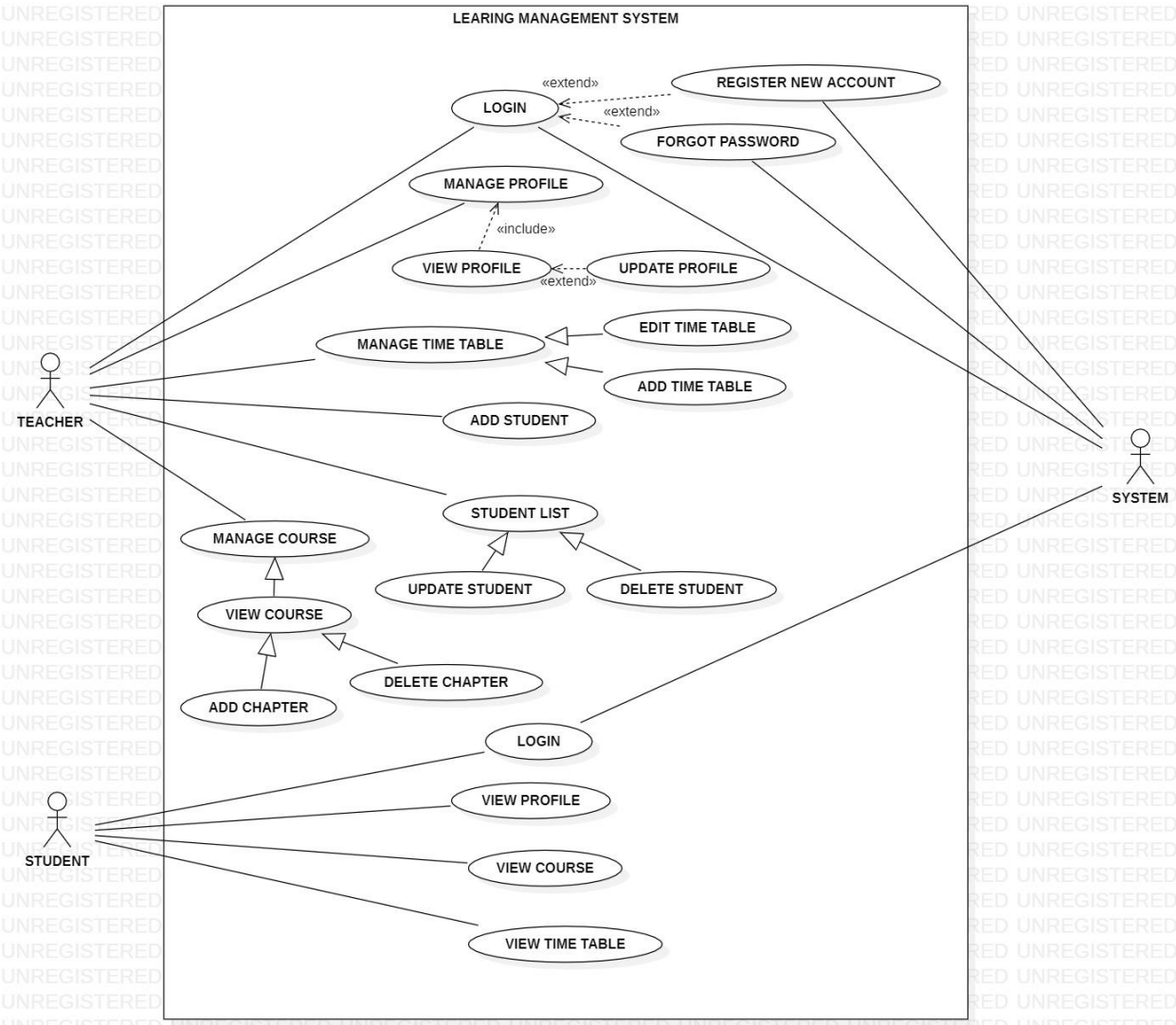
Student :



Teacher :

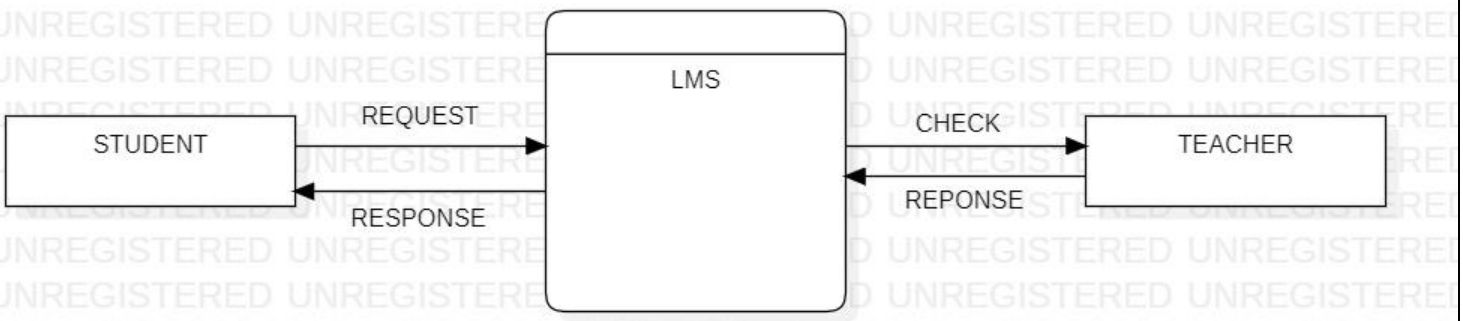

Start
Start Screen
sign-Up
Register
Sign-in
Login
failed
Authentication
successfull
Dashboard
Manage profile
Manage Course
Manage TimeTable
Add Student
Student List
View profile
Update profile
View Courses
view timetable
view student
Update chapters
delete chapter
Update timetable
delete timetable
update student details
delete student
logout
end

6.2 UseCase diagram :

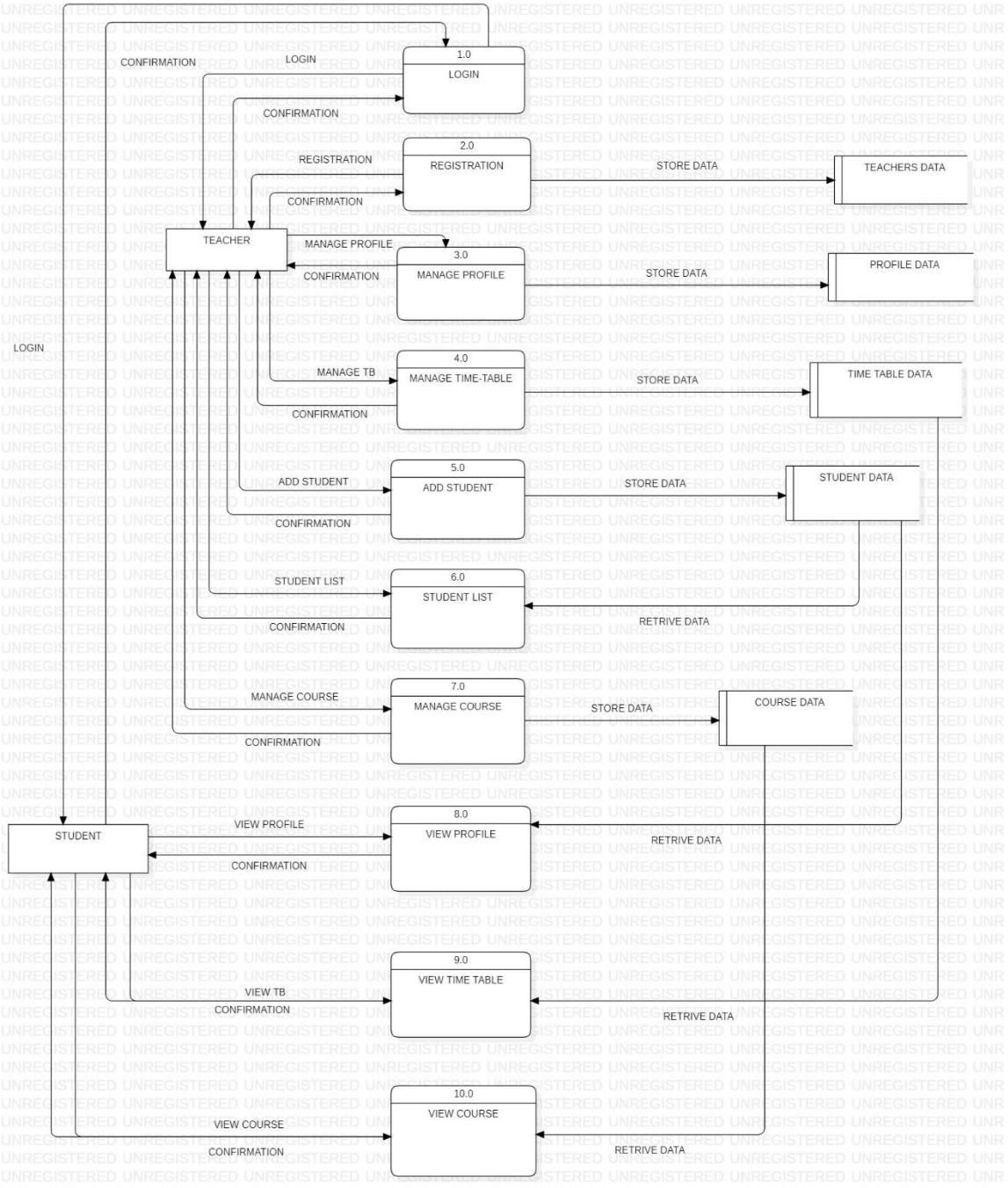


6.3 Data-flow diagram :

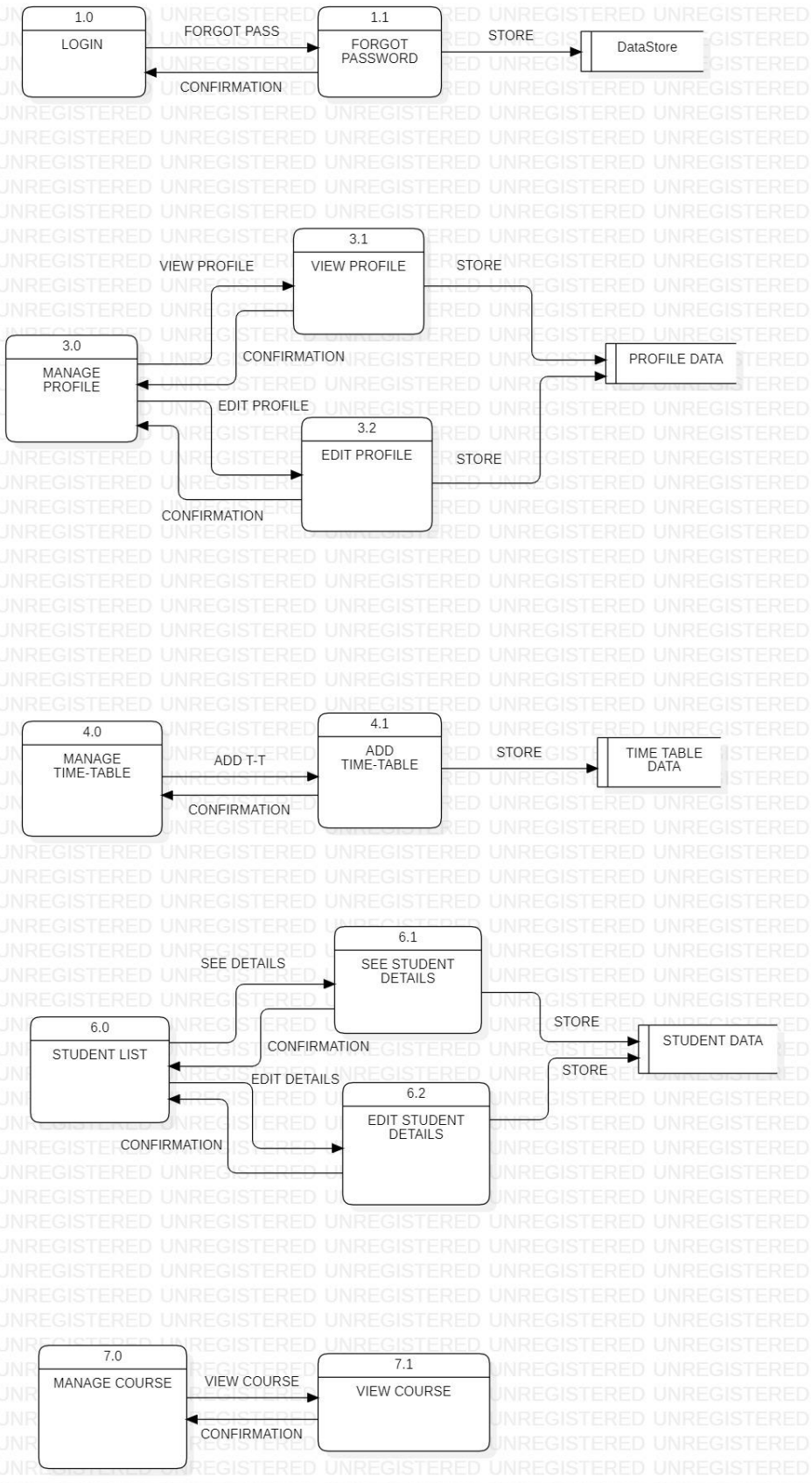
0 Level :



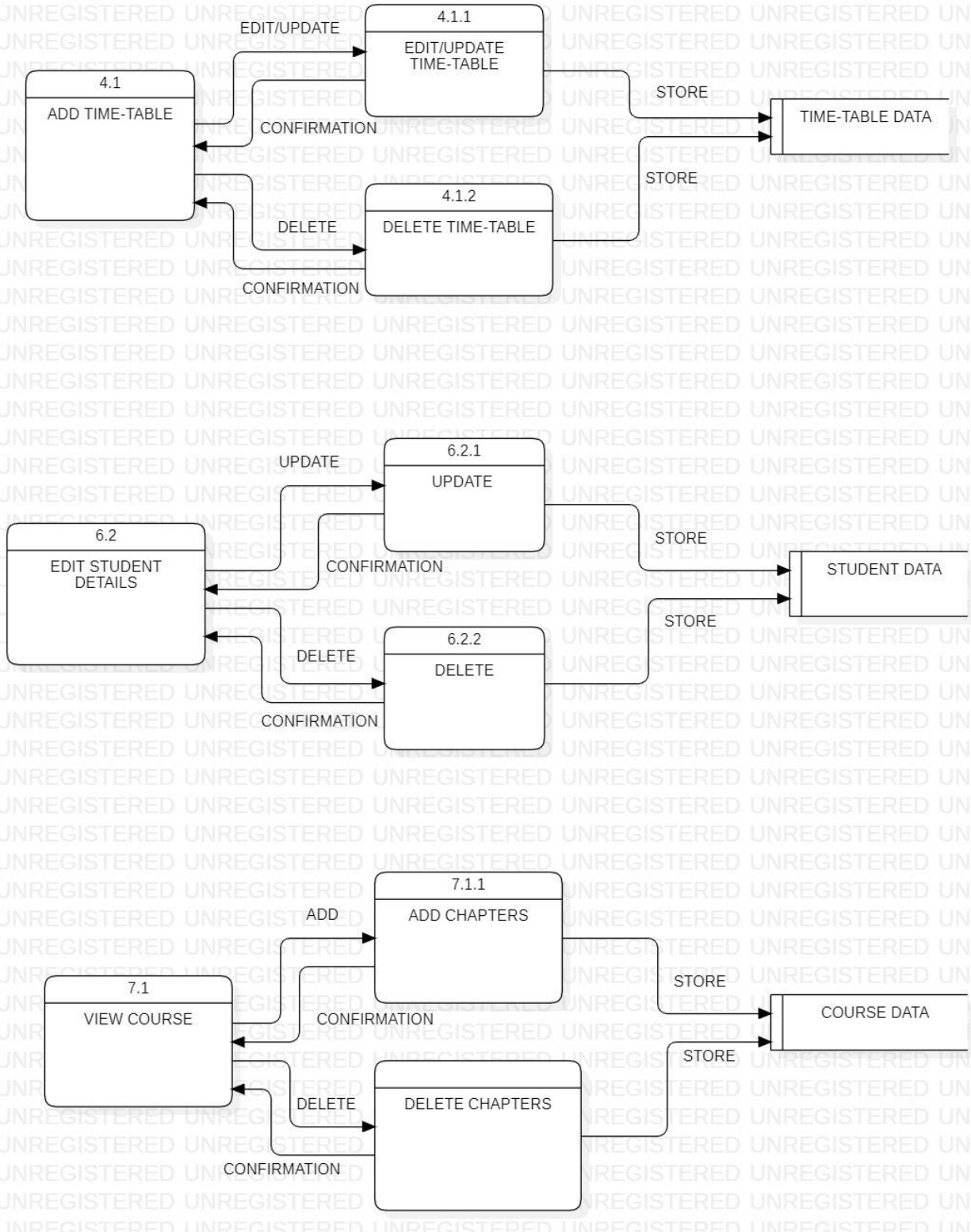
1 Level :


1.0
LOGIN
2.0
REGISTRATION
3.0
MANAGE PROFILE
4.0
MANAGE TIME-TABLE
5.0
ADD STUDENT
6.0
STUDENT LIST
7.0
MANAGE COURSE
8.0
VIEW PROFILE
9.0
VIEW TIME TABLE
10.0
VIEW COURSE
TEACHER
STUDENT
TEACHERS DATA
PROFILE DATA
TIME TABLE DATA
STUDENT DATA
COURSE DATA
CONFIRMATION
LOGIN
REGISTRATION
MANAGE PROFILE
MANAGE TB
ADD STUDENT
STUDENT LIST
MANAGE COURSE
VIEW PROFILE
VIEW TB
VIEW COURSE
STORE DATA
RETRIVE DATA

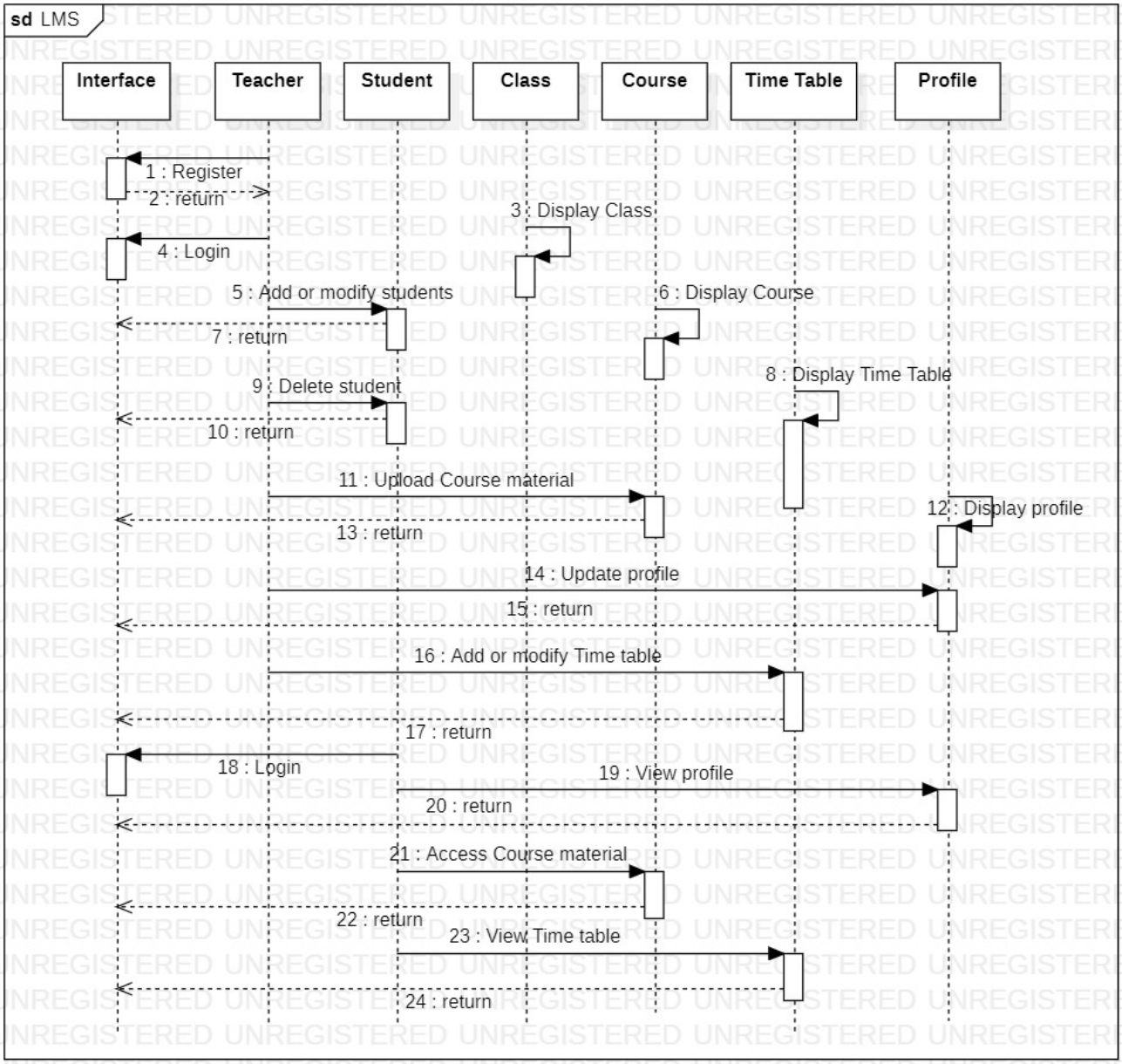
2 Level :



3 Level :

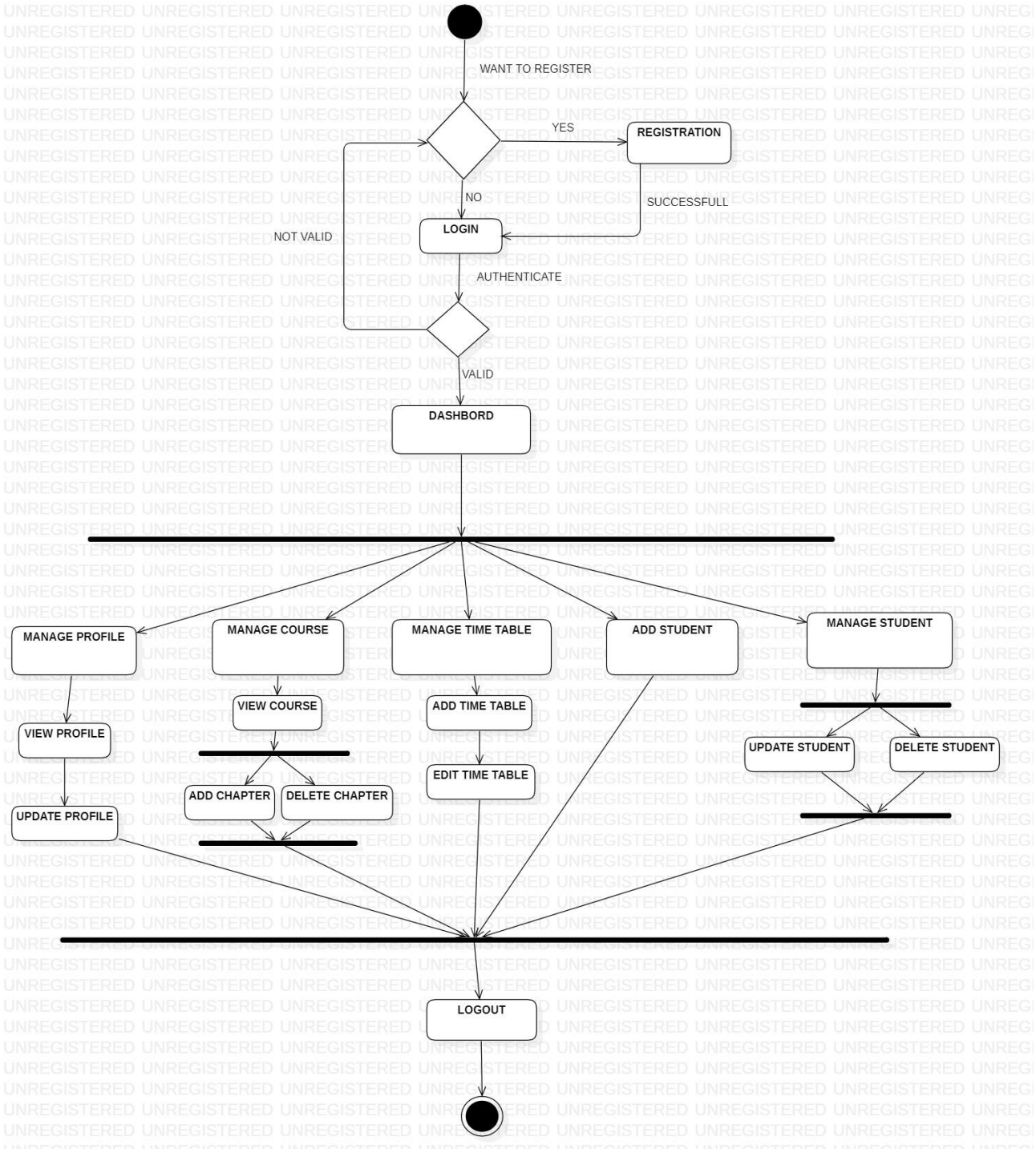

4.1
ADD TIME-TABLE
EDIT/UPDATE
CONFIRMATION
4.1.1
EDIT/UPDATE TIME-TABLE
STORE
TIME-TABLE DATA
DELETE
CONFIRMATION
4.1.2
DELETE TIME-TABLE
STORE
6.2
EDIT STUDENT DETAILS
UPDATE
CONFIRMATION
6.2.1
UPDATE
STORE
STUDENT DATA
DELETE
CONFIRMATION
6.2.2
DELETE
STORE
7.1
VIEW COURSE
ADD
CONFIRMATION
7.1.1
ADD CHAPTERS
STORE
COURSE DATA
DELETE
CONFIRMATION
DELETE CHAPTERS
STORE

6.4 Sequence Diagram:

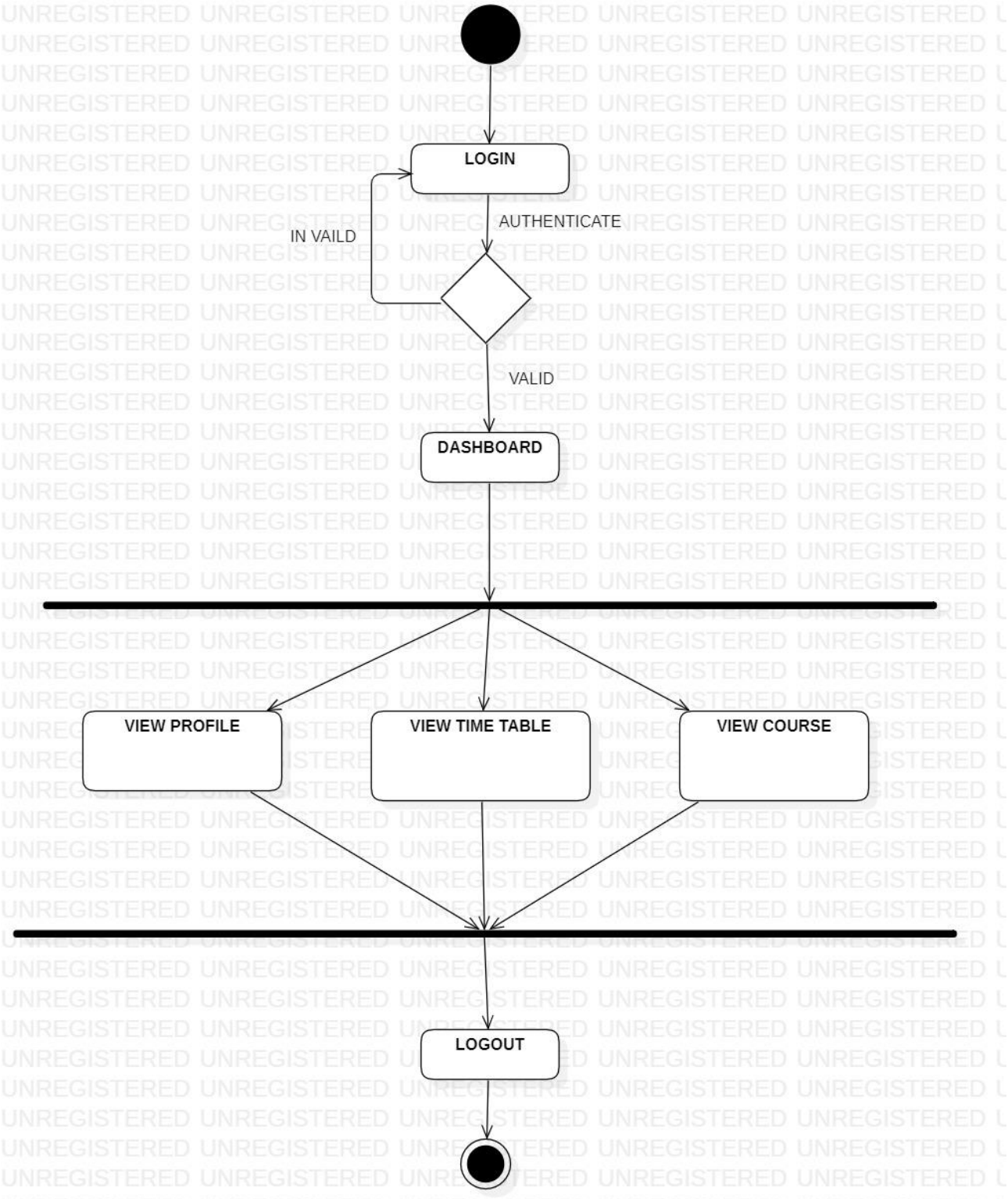


6.5 Activity Diagram :

Teacher-App



Student App:


LOGIN
AUTHENTICATE
IN VAILD
VALID
DASHBOARD
VIEW PROFILE
VIEW TIME TABLE
VIEW COURSE
LOGOUT

6.6 Class diagram :